

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

- 1 1. (Currently amended) A fingerprint imager for capturing an image
2 of a fingerprint comprising:
3 a single sensor integrated circuit having
4 an imaging array having a plurality of sensors arranged along an x-axis for
5 capturing a sub-image of the fingerprint at one time_[1] [5] wherein the fingerprint is
6 moved with respect to the imaging array in a direction that is generally perpendicular
7 to the x-axis; and
8 a mechanism for determining a change in the position of the fingerprint with
9 respect to time and controlling the image capture of the imaging array that includes
10 a navigation array having a plurality of sensors for capturing
11 navigation images of a portion of the fingerprint as the fingerprint moves with
12 respect to the navigation array; and
13 a navigation engine, coupled to the navigation array, the navigation
14 engine configured for controlling when the imaging navigation array captures
15 sub-navigation images, and further configured for receiving the navigation
16 images and based thereon for determining a delta x, which is then compared to
17 a predetermined x unit value for determining the amount of movement of a
18 fingerprint generally along the x-axis and for determining a delta y, which is
19 then compared to a predetermined y unit value for determining the amount of
20 movement of a fingerprint along a y-axis that is generally perpendicular to the
21 x-axis, wherein the navigation engine directs the rate at which the imaging
22 array captures sub-images of the fingerprint in response to the rate of
23 movement of the fingerprint.
- 1 2. (Canceled)

1 3. (Previously presented) The fingerprint imager of Claim 1 wherein
2 the predetermined x unit value is equal to one pixel.

1 4. (Original) The fingerprint imager of Claim 1 wherein the imaging
2 array is separate from the navigation array.

1 5. (Currently amended) The fingerprint imager of Claim 1 wherein
2 the plurality of sensors of the imaging array is one of resistive-type sensors,
3 capacitive[_]type sensors, and optical-type sensors; and wherein the plurality of
4 sensors of the navigation array is one of resistive-type sensors, capacitive[_]type
5 sensors, and optical-type sensors.

1 6. (Original) The fingerprint imager of Claim 1 wherein the
2 fingerprint imager includes a surface along which a finger is moved and wherein the
3 fingerprint imager is implemented in a stand-alone unit comprising:
4 a) optics for focusing light onto the surface; and
5 b) optics assembly for housing the optics.

1 7. (Original) The fingerprint imager of Claim 1 wherein the
2 fingerprint imager includes a surface along which a finger is moved and wherein the
3 fingerprint imager is implemented in a personal computer (PC) peripheral comprising:
4 a) optics for focusing light onto the surface; and
5 b) optics assembly for housing the optics.

1 8. (Original) The fingerprint imager of Claim 7 wherein the PC
2 peripheral device is one of a cursor pointing device and a keyboard.

1 9. (Original) The fingerprint imager of Claim 1 wherein the
2 fingerprint imager includes a surface along which a finger is moved and wherein the
3 surface is one of a physical surface and an optical imaging plane.

1 10. (Previously presented) The fingerprint imager of Claim 1 wherein
2 the pixel size of the sensors of the imaging array is different from the pixel size of the
3 sensors in the navigation array.

1 11. (Previously presented) The fingerprint imager of Claim 10 wherein
2 the pixel size of the sensors of the imaging array has the dimensions of about 50
3 microns by about 50 microns and the pixel size of the sensors in the navigation array
4 has the dimensions of about 20 microns by about 20 microns.

1 12. (Previously presented) The fingerprint imager of Claim 1 wherein
2 the resolution of the sensors of imaging array and the sensors of the navigation array
3 is about 500 dots per inch.

1 13. (Original) The fingerprint imager of Claim 1 wherein the
2 fingerprint imager is implemented in a stand-alone unit and wherein the fingerprint
3 imager further comprises:

- 4 a) a capacitive sensor having a surface along which a finger is moved; and
5 b) an assembly for housing the capacitive sensor.

1 14. (Original) The fingerprint imager of Claim 1 wherein the
2 fingerprint imager is implemented in a personal computer (PC) peripheral and
3 wherein the fingerprint imager further comprises:

- 4 a) a capacitive sensor having a surface along which a finger is moved; and
5 b) an assembly for housing the capacitive sensor.

1 15. (Original) The fingerprint imager of Claim 1 further comprising:
2 a) an imaging array strobe generator for employing the change in position to
3 selectively control when the imaging array captures the sub-images; and
4 b) a processor;
5 c) a composite image generation software which when executing on the
6 processor receives the sub-images and the movement information for each sub-image
7 relative to a previous sub-image and based thereon generates a composite image of
8 the fingerprint; and
9 d) an identification software which when executing on the processor receives
10 the composite image of the fingerprint, analyzes the composite image to generate
11 minutia, and compares the generated minutia to previously stored minutia, and grants
12 access to a resource if the generated minutia matches one of the previously stored
13 minutia.

1 16. (Previously presented) The fingerprint imager of Claim 1 further
2 comprising:
3 a) a processor; and
4 b) a cursor control software which when executing on the processor receives
5 the movement information of the fingerprint along at least one of the x-axis and the y-
6 axis from the navigation engine and uses the movement information to control a
7 cursor.

1 17. (Original) The fingerprint imager of Claim 1 wherein the imaging
2 array is a 1 x N sensor array.

1 18. (Previously presented) The fingerprint imager of Claim 1 wherein
2 the navigation array is a P by Q sensor array.

1 19.-21. (Canceled)

1 22. (Currently amended) A method of operating a fingerprint imager,
2 the method comprising:
3 capturing a first navigation image at a first instant;
4 capturing a second navigation image at a second instant, the second instant
5 being different than the first instant;
6 defining a movement vector having an x-component and a y-component;
7 defining a predetermined x unit value;
8 defining a predetermined y unit value;
9 generating a delta x and a delta y of the movement vector from the first and
10 second navigation images;
11 comparing the delta x to the predetermined x unit value;
12 comparing the delta y to the predetermined y unit value; and
13 generating a strobe signal when at least one of the delta x and the delta y is
14 greater than the predetermined x and y unit values respectively, wherein the strobe
15 signal directs the rate at which an imaging array captures sub-images of the
16 fingerprint in response to the rate of movement of the fingerprint.

1 23. (Previously presented) The method of Claim 22, wherein the
2 predetermined x unit value is defined as one pixel.

1 24. (Currently amended) The method of Claim 22 ~~23~~, wherein the
2 predetermined y unit value is defined as one pixel.